ENVIRONMENTAL SELF-ASSESSMENT FOR THE ELECTRONICS AND COMPUTER INDUSTRY

A QUICK AND EASY CHECKLIST OF POLLUTION PREVENTION MEASURES FOR THE ELECTRONICS AND COMPUTER INDUSTRY

October 1999

Prepared for the Electronics Industry in New York State
by
New York State Department of Environmental Conservation
Pollution Prevention Unit

George E. Pataki, Governor
John P. Cahill, Commissioner

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FAX: (518) 457-2570

INTRODUCTION

Businesses that practice pollution prevention benefit the environment by producing less waste and reducing the transfer of waste from one environmental medium to another (e.g., transferring a waste from water to the air). In addition, business competitiveness can be improved through greater efficiency, wiser water and energy use, increased product quality and enhanced public image. Often, the greatest incentive to practicing pollution prevention is the financial bottom line (i.e., decrease in water, energy and waste disposal costs).

Many small businesses lack the expertise and resources to keep abreast of evolving technologies and industrial practices in pollution prevention. However, staying current is important because if your business ignores these advances it may be needlessly polluting air, land, and water and find itself at a competitive disadvantage.

The *Environmental Self-Assessment for the Electronics and Computer Industry* will help your facility to assess its present performance in preventing pollution and to identify opportunities for additional pollution prevention measures. If your business has limited resources, the self-assessment should serve as a preliminary self-diagnostic tool that you can use before you seek any outside assistance.

Technical assistance is available from professional organizations, vendors, consulting engineers, and on the Internet. Assistance is also available from state and local environmental agencies, such as the New York State Department of Environmental Conservation's Pollution Prevention Unit and the regional NYSDEC Multimedia Pollution Prevention Coordinators. The New York State Environmental Facilities Corporation also provides free, confidential technical assistance to small businesses through its Small Business Assistance Program (see the "Resource Guide," page 16, for a list of agencies, organizations and sites on the Internet that can provide technical information and assistance).

An environmental self-assessment can prove worthwhile as a preventive strategy in much the same way that an internal financial audit helps your business avoid violations of local, state and federal tax laws. It can identify process changes and housekeeping measures that will reduce waste and help your business comply with environmental requirements.

The checklists found in the self-assessment are designed to test a facility's performance in pollution prevention, waste reduction and recycling. To conduct a self-assessment for compliance with environmental rules and regulations you should also obtain *The Environmental Self-Audit For Small Businesses*. This document, which identifies possible environmental compliance problems in the general regulatory categories of air, water, land use, solid waste and hazardous materials, will help small businesses in New York State comply with local, state and federal environmental regulations. It contains information for the business that is about to begin operations, for the existing business that has never examined the environmental impact of its operations and for the business that is about to move, expand or embark on a new venture.

THE ENVIRONMENTAL SELF-ASSESSMENT FOR THE ELECTRONICS AND COMPUTER INDUSTRY

The following checklists are guides designed to be used by anyone involved in the day-to-day operations associated with the electronics industry. This includes businesses that manufacture semiconductors, printed wiring boards, cathode ray tubes, or the packaging and assembly or material recovery of these products. In order to incorporate pollution prevention measures into their daily operations, businesses are advised to conduct routine self-assessments to identify pollution prevention opportunities.

Each section of the self-assessment that is relevant to your business should be reviewed with the plant operator or facility manager who is most familiar with that particular part of the operation. Responses to the questions should show whether potential hazards or polluting activities are occurring that may be addressed by an operational change, product substitution or better housekeeping.

This self-assessment is only one in a series of steps that your business should take to determine its regulatory compliance and to identify suitable methods of waste reduction. The checklists would be most effective when used with related tools, such as workshops and publications. For many small facilities, the self-assessment will likely be as useful as a thermometer would be for a person with a fever: the symptoms may be measured, but an expert opinion may be needed to diagnose the problem and develop corrective measures.

The *Environmental Self-Assessment for the Electronics and Computer Industry* was developed to be used with the *Environmental Compliance and Pollution Prevention Guide to the Electronics and Computer Industry*. Following the completion of the self-assessment, you are advised to consult this guide for additional information on the nature and type of pollution prevention techniques that have been successfully applied by other electronics facilities. Both documents are available through the NYSDEC Pollution Prevention Unit's website at www.dec.state.ny.us/website/ppu.

Progressive facilities will use the environmental self-assessment to achieve two goals: to evaluate current business practices and to develop an ongoing program in pollution prevention.

Don't be discouraged by the sometimes difficult process of identifying and addressing environmental problems. Over the long haul, the measurable benefits of conducting and responding to regular environmental self-assessments may include reductions in environmental hazards, enforcement actions, fines, insurance rates, waste handling costs and accidents. Benefits may also include an improved compliance record, improved worker health and a better work environment. Other benefits may include better relations with regulatory agencies, improved employee morale, favorable publicity and a stronger community reputation for integrity.

The *Environmental Self-Assessment for the Electronics and Computer Industry* is intended to provide useful information to help your facility start to identify possible conditions and opportunities for pollution prevention. However, not all potential pollution prevention measures for your particular facility can be listed given the varied scope and dynamic nature of the electronics and computer industry.

SELF-ASSESSMENT CHECKLISTS

You can use these checklists as guides to develop your own checklists based on your specific facility needs and organization.

Please review each question carefully and check the appropriate box. A ***Yes*** answer indicates that your business or facility has incorporated pollution prevention, waste reduction and/or recycling measures into its day-to-day activities. A ***No* or *Can't Determine*** answer indicates that an opportunity to prevent or reduce pollution may exist. Further review is needed on the questions that receive a ***No* or *Can't Determine*** response.

Use this self-assessment to create a working list of pollution prevention, waste reduction and recycling opportunities that should be explored in greater detail. You are encouraged to consult with the Department of Environmental Conservation's Pollution Prevention Unit located in Albany, the regional DEC Multimedia Pollution Prevention (M2P2) Coordinators, trade associations, vendors and environmental engineers for additional information and assistance (see the "Resource Guide," page 16, for a list of agencies and organizations that provide technical assistance on pollution prevention).

MATERIAL HANDLING, STORAGE & SPILL PREVENTION

	Yes	No	Not Applicable	Can't Determine
Have the employees responsible for purchasing supplies at your facility been trained to manage inventory and keep accurate records of all chemicals used?	"	"	"	"
Does your facility keep chemical inventories to a minimum (keep only as much chemical supply on site as needed for current production) and purchase smaller containers of infrequently used materials?	"	"	"	"
Does your facility use materials based on product and receipt dates?	"	"	"	"
Have your employees been trained to safely handle the types of packages and chemicals received?	"	"	"	"

Have your employees been trained in the hazardous waste regulations (e.g., labeling, storage and manifesting requirements) related to the job they are doing?	“	“	“	“
Does your facility maintain and make readily available to employees Material Safety Data Sheets (MSDS) for all chemicals used at the facility? (This is an OSHA requirement.)	“	“	“	“
Have the employees at your facility been trained to identify alternative, less toxic products to reduce the amount of hazardous chemicals used in your facility?	“	“	“	“
Do you store all hazardous waste in an area labeled as a “hazardous waste storage area” at your facility?	“	“	“	“
Do you store all materials and wastes within the building or in a covered storage building at your facility?	“	“	“	“
Does your materials storage area have a spill containment and collection system?	“	“	“	“
Have your employees been trained to safely handle spills?	“	“	“	“
Have your employees been trained in spill reporting requirements?	“	“	“	“

IBM photo

Proper labeling and storage of hazardous waste at your facility is important.

GENERAL POLLUTION PREVENTION MEASURES

There are many general pollution prevention measures and practices applicable to printed wiring board and semiconductor manufacturing facilities; assembly and packaging facilities; and asset recovery facilities. You should use these general measures and practices to improve efficiency, increase profits, and minimize environmental impacts at your facility.

General Pollution Prevention Measures	**Yes**	**No**	**Not Applicable**	**Can't Determine**
Does your facility have a formal pollution prevention program?	"	"	"	"
Are your fabrication facilities and assembly buildings designed, maintained and used in accordance with all applicable Federal, State and local regulations and codes?	"	"	"	"
Does your facility have an environmental assessment program to review design of new processes or tools for the purpose of identifying and incorporating pollution prevention techniques?	"	"	"	"
Does your facility consider alternative processes to reduce toxic chemical use?	"	"	"	"
Does your facility provide pollution prevention training for employees?	"	"	"	"
Does your facility provide chemical and material toxicity and safety information to workers?	"	"	"	"
Does your facility follow an equipment maintenance schedule?	"	"	"	"
Does your facility take measures to reduce energy consumption?	"	"	"	"
Does your facility segregate waste streams?	"	"	"	"

PRINTED WIRING BOARD MANUFACTURING

Printed wiring boards (PWBs) are the structures on which electronic components such as semiconductors and capacitors are mounted. PWBs are used in many products such as televisions, radios, computers and electronic toys. The wet chemical processes used in PWB manufacturing generate a significant amount of hazardous waste and can create potential environmental and health risks. In addition, the processes also require a significant amount of energy and water usage.

Pollution prevention opportunities include reducing water and energy use; minimizing drag-out; and recovering and reusing copper.

General Operating Procedures	**Yes**	**No**	**Not Applicable**	**Can't Determine**
Does your facility perform in-house regular bath analysis to determine when to dump process baths (or portions of process baths) rather than dump baths based on a time schedule?	"	"	"	"
Does your facility practice a preventative maintenance program for equipment tanks?	"	"	"	"
Does your facility have overflow alarms in process tanks?	"	"	"	"
Does your facility cover solvent tanks when not in use to reduce evaporation and emissions?	"	"	"	"
Does your facility perform regular maintenance and performance checks for racks?	"	"	"	"
Does your facility have a leak detection system?	"	"	"	"
Does your facility recycle non-contact cooling water?	"	"	"	"
Does your facility maintain records of bath analysis and additions?	"	"	"	"

Reduction and Recovery of Drag-out	**Yes**	**No**	**Not Applicable**	**Can't Determine**
Does your facility allow for long drip times over process tanks?	“	“	“	“
Does your facility have drip shields between process and rinse tanks?	“	“	“	“
Does your facility use mechanical drag-out methods?	“	“	“	“
Does your facility use drag-in/drag-out rinse tank arrangements?	“	“	“	“
Does your facility use drip tanks and return contents to process baths?	“	“	“	“
Does your facility keep chemical concentration of process baths at the lowest acceptable operating level?	“	“	“	“
Does your facility use wetting agents to decrease surface tension in tanks when practical?	“	“	“	“
Does your facility use filters to remove organic contaminants?	“	“	“	“

Reduction in Use of Rinse Water	**Yes**	**No**	**Not Applicable**	**Can't Determine**
Does your facility use counter flow rinsing, spray rinsing, fog rinsing, reactive rinsing or cascade rinsing systems?	“	“	“	“
Does your facility use flow controllers?	“	“	“	“
Does your facility use flow meters to track water usage?	“	“	“	“
Does your facility use rinse timers?	“	“	“	“
Does your facility use conductivity or pH controllers?	“	“	“	“
Does your facility use part sensors to activate rinse?	“	“	“	“

Does your facility use squeeze rollers to remove water?	“	“	“	“
Does your facility use an agitated rinse bath?	“	“	“	“

Material Reuse, Recycle and Recovery	**Yes**	**No**	**Not Applicable**	**Can’t Determine**
Has your facility installed a closed-loop recycling system for rinsewater to reduce/reuse water consumption?	“	“	“	“
Does your facility return drag-out waste back into process tanks for reuse?	“	“	“	“
Does your facility remove and recover lead and tin from printed wiring boards by electrolysis or chemical precipitation?	“	“	“	“
Does your facility recover copper during the etching process?	“	“	“	“

P2 Pays

Lockheed Martin uses the no-clean soldering process at its facility in Syracuse, N.Y. The company produces military electronics products.

No-clean soldering is not removing flux and other soldering residues from electronic equipment after making a solder connection. Significant cost savings and environmental benefits (such as reduction of cleaning solvents utilized and hazardous waste generated) can result from the use of the no-clean solder process.

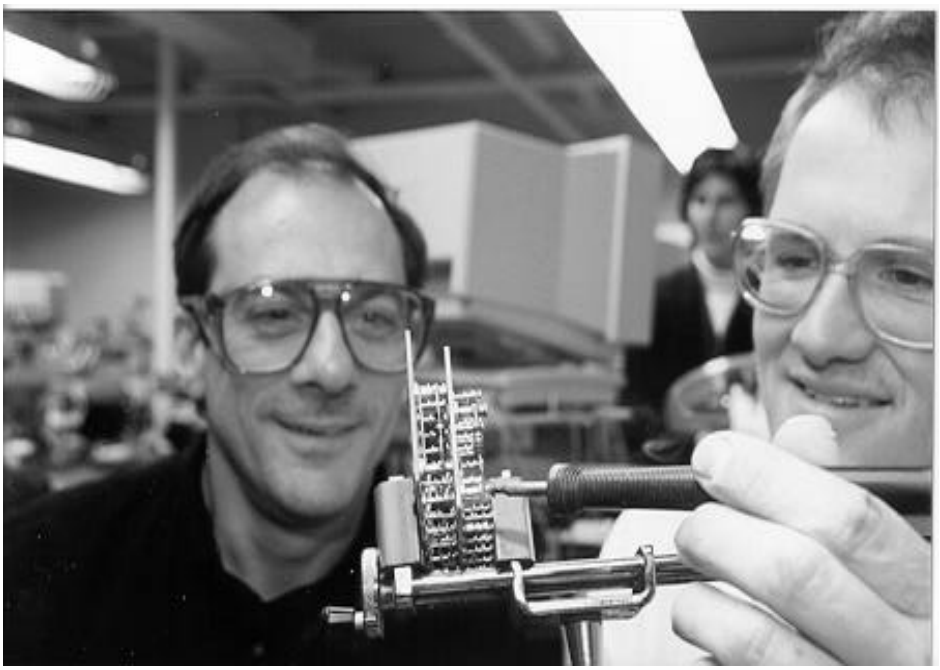

Photo by Sharon Thomson

Patrick Bologna, DEC Pollution Prevention Unit, with Lockheed Martin representative viewing the "no-clean solder process" used at their facility in Syracuse.

SEMICONDUCTOR MANUFACTURING

Semiconductors are used in computers, telecommunication products, industrial machinery, transportation equipment, military hardware and consumer electronics products.

Semiconductor manufacturing plants use large quantities of water and energy to clean and rinse silicon wafers during the manufacturing process. Pollution prevention opportunities include using less water, energy and hazardous chemicals; and generating less chemical waste.

General Operating Procedures	**Yes**	**No**	**Not Applicable**	**Can't Determine**
Has your facility eliminated the use of ozone-depleting chemicals (i.e., methyl chloroform and CFC 113) in manufacturing processes?	"	"	"	"
Does your facility take measures to eliminate or reduce perfluorocompound (PFC) emissions from the manufacturing processes?	"	"	"	"
Does your facility take measures to extend the bath life by reducing drag-out?	"	"	"	"
Does your facility take measures to extend the bath life by reducing evaporation (i.e., cover tanks)?	"	"	"	"
Does your facility use purified water rather than tap water in process bath and for rinsing?	"	"	"	"

Reduction of Use of Water	**Yes**	**No**	**Not Applicable**	**Can't Determine**
Does your facility monitor water use for all water-using equipment to provide an accurate overview of water usage at the facility?	"	"	"	"
Does your facility reduce water use, recycle water or reuse water for other processes whenever possible?	"	"	"	"

Does your facility modify processes (i.e., convert from continuous flow to periodic water use) to reduce water use whenever possible?	“	“	“	“
Does your facility modify equipment (i.e., low flow shower heads) to reduce water use whenever possible?	“	“	“	“
Does your facility utilize flow meters, flow control valves or flow reducers?	“	“	“	“
Does your facility use spray rinsing, fog nozzles or counter-current rinsing systems to improve rinse efficiency?	“	“	“	“
Does your facility use an increased agitation method to improve rinse efficiency?	“	“	“	“
Does your facility use automated rinse flow controls to improve rinse efficiency?	“	“	“	“

Cleaning and Drying Waste Reduction	**Yes**	**No**	**Not Applicable**	**Can’t Determine**
Does your facility use multiple stage counter-current cleaning methods?	“	“	“	“
Does your facility use automated controls?	“	“	“	“
Does your facility use an acid recovery system?	“	“	“	“
Does your facility reuse acid/caustic as treatment of other wastes?	“	“	“	“

Metal Deposition (Electroplating) Waste Reduction	**Yes**	**No**	**Not Applicable**	**Can’t Determine**
Does your facility remove or segregate anodes when not in use to prevent impurities from entering the bath?	“	“	“	“
Does your facility clean and rinse parts prior to plating?	“	“	“	“

Does your facility use deionized or distilled water instead of tap water to extend plating solution life?	“	“	“	“
Has your facility replaced chromium plating with nickel?	“	“	“	“
Does your facility take measures to reduce drag-out during the electroplating process?	“	“	“	“
Does your facility use innovative deposition technology (i.e., Jet Vapor Deposition)?	“	“	“	“
Does your facility filter and reconstitute bath in recycling during the electroplating process?	“	“	“	“

Reduction in Use of Energy	**Yes**	**No**	**Not Applicable**	**Can’t Determine**
Does your facility operate an energy efficient heating, ventilation and air conditioning system?	“	“	“	“
Does your facility utilize energy efficient components including high efficiency motors, fans and pumps?	“	“	“	“
Does your facility use high performance air filters?	“	“	“	“
Does your facility minimize the cleanroom size (use mini-environment) to reduce operating costs whenever practical?	“	“	“	“
Does your facility use an energy efficient lighting system?	“	“	“	“

ASSEMBLY AND PACKAGING

After printed wiring boards are manufactured, the electrical components are attached. Adhesives are applied and components are attached and soldered. Wastes generated during assembly of PWBs include solder and spent solvents.

Semiconductors are assembled by mounting chips onto a frame, connecting the chips to metal strips and packaging them in plastic or ceramic packages. Wastes generated during assembly include organic vapors and spent cleaning solutions.

Manual soldering processes are used in the manufacture of electronic components (e.g., capacitors), modules, subassemblies, assemblies, and systems. Wastes generated during assembly include solder, waste solvents, organic vapors, and waste cleaning solutions.

Pollution prevention opportunities include reducing use of lead solder and solvent use.

Assembly and Packaging	**Yes**	**No**	**Not Applicable**	**Can't Determine**
Does your facility take measures to reduce the use of lead or use lead-free soldering systems?	"	"	"	"
Does your facility take measures to minimize solvent use?	"	"	"	"
Does your facility take measures to reduce the use of hazardous chemicals in plating processes (i.e., recycling of chemicals)?	"	"	"	"
Does your facility use cyanide-free plating?	"	"	"	"
Does your facility implement water recycling/reuse programs to reduce water consumption in plating and other processes?	"	"	"	"
Does your facility take measures to improve efficiency of high energy consumption equipment to reduce energy consumption?	"	"	"	"
Do the materials used allow for hazard free handling by consumers and product take back for eventual reuse or recycling?	"	"	"	"

CRT DEMANUFACTURING AND MATERIAL RECOVERY

The lead in cathode ray tube (CRT) display components and end-of-life concerns have been the most significant environmental concerns in CRT manufacturing.

The number of computers and televisions being discarded will continue to grow, negatively affecting the municipal solid waste stream and the environment. TVs contain leaded glass. Computers also have leaded glass and may contain lithium batteries, mercury or other regulated components.

Demanufacturing	**Yes**	**No**	**Not Applicable**	**Can't Determine**
Have you evaluated ways to reduce the wastes produced at your facility?	“	“	“	“
Does your facility recondition and reuse components from discarded printed circuit boards?	“	“	“	“
Does your facility use returnable containers for the shipment of parts?	“	“	“	“
Is the packaging used for your product able to be reduced, reused or recycled without difficulty in separating the packaging materials?	“	“	“	“
Does your facility sort and separate all reusable and recyclable components (i.e., metals, plastic, glass and batteries) prior to any landfill/hazardous waste disposal?	“	“	“	“
Does your facility have a program for effectively managing product end-of-life equipment?	“	“	“	“

IBM photo

Products at asset recovery center to be sorted for reuse or recycling.

P2 Pays

IBM Corporation in Endicott, NY operates an asset recovery center where monitors, cathode ray tubes (CRTs), and flat panel displays (FPDs) are resold or recycled. In 1998, approximately 96.5% of the products brought in were recycled. Plastics are recycled also.

IBM estimates that 8 million pounds of waste were diverted from landfills with a savings of $345,000 from the plastics and $933,000 from the monitors. These figures include both disposal cost avoidance and revenues generated from the sales of these materials.

IBM photo

IBM operates an asset recovery center in Endicott, NY.

NEXT STEPS

Following the completion of the self-assessment, you should be left with a list of operational areas where there are opportunities for pollution prevention. The next step is to obtain additional information to allow you to explore these opportunities and to determine which are cost effective and technically feasible without reducing service quality. A good first step is to consult the publications listed in the references section (see page 23). You should also check with vendors and request information about chemicals and processes that are more "environmentally friendly." Other sources of information regarding pollution prevention are the trade organizations and local, state and federal programs listed in the resource guide (see page 16).

RESOURCE GUIDE

The following organizations provide technical assistance; publish information; conduct workshops and conferences; and provide telephone and on-site information on pollution prevention and better management of air, water, solid and hazardous waste issues.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road, Albany, NY 12233

Pollution Prevention Unit
(518) 457-2553
Small Quantity Generator P2 Hotline
(800) 462-6553
This technical assistance unit provides P2 information, develops industry sector manuals and other publications, offers workshops/training, holds annual pollution prevention conference, coordinates NYS Governor's P2 Awards, and prepares annual toxic release inventory (TRI) report.

Division of Solid & Hazardous Materials
Bureau of Hazardous Waste Management
(518) 485-8988
This bureau is responsible for making hazardous waste determinations, for reviewing hazardous waste reduction plans, hazardous waste permitting, and for hazardous waste compliance.

Bureau of Waste Reduction & Recycling
(518) 457-7337
This bureau is responsible for the waste tire program, the beneficial use program, the composting program, and other solid waste recycling and waste reduction issues.

Division of Air Resources
Bureau of Stationary Sources
(518) 457-7688
This bureau is responsible for source review, permitting, MACT, NESHAP implementation, and air toxics assessments.

Division of Water
Bureau of Water Facilities Design
(518) 457-1157
Responsible for managing the State Pollutant Discharge Elimination System (SPDES) permits, the SPDES program for storm water discharges, the water resources programs, and the municipal water supply permits.

Division of Environmental Permits
Waste Transporter Section
(518) 457-2224
This office is responsible for issuing permits to waste haulers that transport solid and hazardous, industrial/commercial, sewage and septage waste.

Division of Environmental Remediation
Bureau of Spill Prevention and Response
(518)457-9412
This office is responsible for the registration of tanks, presenting workshops and training, developing publications, receiving spill notifications, and serves as an information clearinghouse for industries and the public.

Spill Response Hotline
(800) 457-7362
To report releases of petroleum products or hazardous substances to air, land or water in New York State. Regulations require reporting within 2 hours if certain conditions are not met. Also, the National Response Center should be notified.

Petroleum Bulk Storage Hotline
(888) 457-4351
Provides technical assistance on chemical and petroleum aboveground and underground storage tanks.

NYSDEC Regional Offices

REGION 1
Nassau & Suffolk Counties
Building 40 SUNY at Stony Brook
Stony Brook, NY 11794
(516) 444-0354

REGION 2
Bronx, Kings, New York, Queens and Richmond Counties
1 Hunters Point Plaza
Long Island City, NY 11101
(718) 482-4900

REGION 3
Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster & Westchester Counties
21 South Putt Corners Road
New Paltz, NY 12561-1696
(914) 256-3000

REGION 4
Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady & Schoharie Counties
1150 North Westcott Road
Schenectady, NY 12306-2014
(518) 357-2234

REGION 5
Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren & Washington Counties
Route 86
Ray Brook, NY 12977
(518) 897-1200

REGION 6
Herkimer, Jefferson, Lewis, Oneida & St. Lawrence Counties
317 Washington Street
Watertown, NY 13601
(315) 785-2238

REGION 7
Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga & Tompkins Counties
615 Erie Boulevard West
Syracuse, NY 13204-2400
(315) 426-7400

REGION 8
Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne & Yates Counties
6274 East Avon-Lima Road
Avon, NY 14414
(716) 226-2466

REGION 9
Allegany, Cattaraugus, Chautauqua, Erie, Niagara & Wyoming Counties
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7000

State and Local Assistance

Erie County Office of Pollution Prevention
Department of Environment and Planning
95 Franklin Street, Room 1077
Buffalo, NY 14202-3973
(716) 858-7674
Provides confidential assistance to businesses and the private sector in Erie County.

NYC Department of Environmental Protection, Environmental Economic Development Assistance Unit
59-17 Junction Boulevard
Corona, NY 11368
(718) 595-4436
Provides assistance to small businesses in New York City.

The Center for Business and Industry
SUNY at Fredonia, Lagrasso Hall
Fredonia, NY 14063
(716) 673-3177
Provides assistance for businesses located in Chautauqua, Cattaraugus, and Allegany counties.

SUNY Buffalo
Center for Integrated Waste Management
Jarvis Hall, Room 207
Buffalo, NY 14260-4400
(716) 645-3446
Provides research and development support to industries, businesses, and governmental agencies.

Broome County Division of Solid Waste Management
Edwin Crawford County Office Building
44 Hawley Street
Binghamton, NY 13901
(607) 778-2250
Provides assistance to residents and businesses in Broome County.

NYS Environmental Facilities Corporation
Small Business Assistance Program
50 Wolf Road, Room 502
Albany, NY 12205
(800) 780-7227
(518) 457-9135
Provides confidential technical assistance to small businesses in New York State on issues regarding the Clean Air Act.

Clean Air Act Small Business Ombudsman
Empire State Development
Small Business Division
633 3rd Avenue, 32nd Floor
New York, NY 10017
(800) STATENY or (800) 782-8369
Provides confidential assistance to small businesses in New York State on issues regarding the Clean Air Act.

Your town or county Department of Health, Public Works Office, or Environmental Management Council may also be able to provide you with information on local regulations and issues.

Federal Assistance

US Environmental Protection Agency

Asbestos and Small Business Ombudsman Hotline
401 M Street SW
Washington, DC 20460
Phone: (800) 368-5888
Helps private citizens, small businesses, and smaller communities with questions on all program aspects with EPA.

RCRA/Superfund/EPCRA Hotline
401 M Street SW
Washington, D.C. 20460
(800) 424-9346
Answers questions on matters related to solid waste, hazardous waste, or underground storage tanks. Also, can be used to order EPA publications.

EPA Region II Office
Compliance Assistance & Program Support Branch
290 Broadway, 21st Floor
New York, NY 10007-1866
(212) 637-3268
Provides compliance and pollution prevention assistance to EPA Region 2 area businesses.

RCRA Compliance Branch
290 Broadway, 22nd Floor
New York, NY 10007-1866
Phone: (212) 637-4145
Fax: (212) 637-4949
In addition to conducting RCRA inspections on small businesses, this office provides technical assistance on RCRA related issues.

EPA Headquarters
Office of Compliance (2224A)
401 M St., SW
Washington, DC 20460
Phone: (202) 564-2280
Fax: (202) 564-0037
Provides regulatory, technical, compliance and pollution prevention assistance.

Pollution Protection Information Clearinghouse (PPIC)
PPIC-EPA
401 M Street, SW (7409)
Washington, DC 20460
Phone: (202) 260-1023
Fax: (202) 260-9780
E-mail: ppic@epamail.epa.gov
Provides a library and an electronic bulletin board dedicated to information on pollution prevention.

National Response Center
(800) 424-8802
To report oil and chemical spills to the Federal Government. This hotline is staffed by the U.S. Coast Guard.

US Department of Transportation

Hazardous Materials Information Center
Office of Hazardous Materials Standards
Research & Special Programs Administration
400 7th Street, SW
Washington, DC 20590-0001
Phone:(800) 467-4922
Provides technical assistance on matters related to DOT's hazardous materials transportation regulations.

Trade Organizations

American Electronics Association
New York Regional Office
455 Connack Road
Deerpark, New York 11729
Phone:(516) 274-3227
Fax: (516) 274-3231
http://www.aeanet.org

Electronics Industry Alliance (EIA)
2500 Wilson Boulevard
Arlington, Virginia 22201-3834
Phone: (703) 907-7500
http://www.eia.org

Association Connecting Electronics Industries (IPC)
2215 Sanders Road
Northbrook, IL 60062-6135
Phone:(847) 509-9700
Fax:(847) 509-9798
http://www.ipc.org

Microelectronics and Computer Technology Corporation
Environmental Programs
3500 West Balcones Center Drive
Austin, Texas 78759-5398
Phone:(512)338-3672
http://www.mcc.com

Semiconductor Industry Association
181 Metro Drive, Suite 450
San Jose, CA 95110
Phone:(408) 436-6600
Fax:(408) 436-6646
http://www.semichips.org

Semiconductor Equipment and Materials International (SEMI)
North America Headquarters
805 East Middlefield Road
Mountain View, CA 94043-4080
Phone:(650) 964-5111
Fax: (650) 967-5375
http://www.semi.org

Resources on the Internet

Organization	Internet Address
American Electronics Association	http://www.aeanet.org
Association Connecting Electronics Industries (IPC)	http://www.ipc.org
Electronics Industry Alliance	http://www.eia.org
Microelectronics and Computer Technology Corporation	http://www.mcc.com/mcc/RnD/env_prog.html
National Pollution Prevention Roundtable	http://es.epa.gov/nppr
Pacific Northwest Pollution Prevention Resource Center	http://www.pprc.org
Printed Wiring Board Resource Center	http://www.pwbrc.org
NYS Department of Environmental Conservation (NYSDEC)	http://www.dec.state.ny.us
NYSDEC-Pollution Prevention Unit	http://www.dec.state.ny.us/website/ppu
NYS Empire State Development Business Assistance Services	http://www.empire.state.ny.us
NYS Environmental Facilities Corporation	http://www.nysefc.org
NYS Energy Research and Development Authority	http://www.nyserda.org
SEMATECH	http://www.sematech.org
Semiconductor Industry Association	http://www.semichips.org
U.S. Department of Energy Pollution Prevention Information Clearinghouse	http://epic.er.doe.gov/epic

Resources on the Internet (Continued)

Organization	Internet Address
USEPA - Common Sense Initiative	http://www.epa.gov/commonsense
USEPA - Design for the Environment	http://earth2.epa.gov/dfore
USEPA - Enviroene	http://es.epa.gov
USEPA- Industry Sector Notebooks	http://es.epa.gov/oeca/sector
USEPA - Office of Underground Storage Tanks	http://www.epa.gov/unix0008/water/muni/under.html
USEPA - Small Business Assistance Program	http://www.epa.gov/smallbusiness
USEPA - Technology Transfer Network	http://www.epa.gov/ttn
Tellus Institute	http://www.tellus.org
Waste Reduction Resource Center	http://www.p2pays.org

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